

Abstract of the Invention

An apparatus for changing speed of bicycles, more particularly, an apparatus for changing speed of bicycles that changes speed of bicycles using inner gears inside a rear wheel hub and controlling the inner gears with controllers mounted on a hub shaft. The apparatus is comprising: a driven sprocket receiving the driving force of a driving sprocket; a speed controlling portion, which is comprising a carrier that is fixed to one side of the driven sprocket, a plurality of planetary gears is installed; at least two sun gears that are engaging with each step of the planetary gears and ratchet-teeth is formed along inner circumference; a ring gear that is engaging with the other side of the planetary gears; an output portion, which is comprising a hub shell transferring the driving force to a rear wheel by means of the carrier and the ring gear; a clutch means that is mediating the driving force selectively with being mounted between the carrier and the hub shell, and the ring gear and the hub shell; and a speed-change controlling portion, which is comprising a hub shaft having a pawl-positioning portion; at least two set of pawls which are engaging or releasing with the ratchet-teeth of the at least two sun gears; a pawl-controlling ring that is controlling the position of the at least two set of pawls; a transforming disk having a groove along outer circumference, that a hooking portion is formed a certain position on the outer circumference, in order to transform the position of the pawl-controlling ring via a mediating portion; a spring that is for restoring position of the transforming disk to original position; a spacing portion enabling the transforming disk to rotate freely.

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